

## 1104- AGGREGATES FOR AGGREGATE BASE CONSTRUCTION

### SECTION 1104

#### AGGREGATES FOR AGGREGATE BASE CONSTRUCTION

##### 1104.1 DESCRIPTION

This specification covers aggregates for use in aggregate base construction.

##### 1104.2 REQUIREMENTS

###### a. Composition.

- (1) Type AB-1 or AB-2 may be singularly or any combination of crushed stone, crushed or uncrushed gravel, sand, sand-gravel, or limestone gravel mixed with soil or other qualified binder material.
- (2) Type AB-3 is at least 85% limestone or dolomite produced by mechanical crushing.

###### b. Quality<sup>1</sup>.

- Soundness<sup>2</sup>, minimum (KTMR-21) .....0.85
- Wear<sup>3</sup>, maximum (KTMR-25) .....50%
- Absorption, maximum (AB-1 only) (KT-6, Procedure I) .....4.0%
- Specific Gravity (dry), minimum (KT-6, Procedure I) .....2.20

<sup>1</sup>Crushed aggregates with less than 10% material retained on the No. 4 sieve (excluding mineral filler supplements) must be produced from a source complying with the official quality requirements of this Section prior to crushing.

<sup>2</sup>The above requirements for soundness do not apply for aggregates having less than 10% material retained on the No. 4 sieve.

<sup>3</sup>The above requirements for wear do not apply to aggregates having less than 10% material retained on the No. 8 sieve.

###### c. Product Control.

- (1) Gradation and Plasticity. Provide a uniformly mixed final product that complies with **TABLE 1104-1**.
- (2) Deleterious Substances. Provide aggregates that are free from weeds, sticks, grass, roots and other undesirable foreign matter.

**d. Stockpiling.** Stockpile and handle aggregates in such a manner to prevent detrimental degradation and segregation, the incorporation of appreciable amounts of foreign material, and the intermingling of stockpiled materials.

##### 1104.3 TEST METHODS

Test aggregates according to the applicable provisions of **SECTION 1115**.

TABLE 1104-1: GRADATION AND PLASTICITY OF AGGREGATES FOR AGGREGATE BASE CONSTRUCTION											
Type	% Retained-Square Mesh Sieves									P.I.	Liquid Limit (Max.)
	2"	1 1/2"	1"	3/4"	3/8"	No. 4	No. 8	No. 40	No. 200		
AB-1	0	0-10		5-40		35-75	54-85	78-95	90-98	0-6	25
AB-2*			0		1-35		25-50	60-75	78-90	1-6	25
AB-3**	0	0-5		5-30		35-60	45-70	60-84	80-92	2-8	30

\*The fraction passing the No. 200 sieve shall not exceed 2/3 of the fraction passing the No. 40 sieve.

\*\*The fraction passing the No. 200 sieve shall not exceed 3/4 of the fraction passing the No. 40 sieve.

##### 1104.4 PREQUALIFICATION

Prequalify aggregate sources according to **subsection 1101.4**.

## **1104- AGGREGATES FOR AGGREGATE BASE CONSTRUCTION**

### **1104.5 BASIS OF ACCEPTANCE**

Aggregates covered by this subsection are accepted based on the procedures described in **subsection 1101.5.**

## 1111 - AGGREGATES FOR SURFACING OR RESURFACING

### SECTION 1111 AGGREGATES

#### AGGREGATES FOR SURFACING OR RESURFACING

##### 1111.1 DESCRIPTION

This specification covers the type of aggregate used for surfacing or resurfacing operations as shown in the Contract Documents.

##### 1111.2 REQUIREMENTS

**a. Composition.** Provide one of the following types of aggregates for surfacing or resurfacing as shown in TABLE 1111-1.

**b. Quality<sup>1</sup>.**

- Soundness<sup>2</sup>, minimum (KTMR-21) ..... 0.85
- Wear<sup>3</sup>, maximum (KTMR-25) ..... 45%

<sup>1</sup>Crushed aggregates with less than 10% material retained on the No. 4 sieve (excluding mineral filler supplements) must be produced from a source complying with the official quality requirements of this Section prior to crushing.

<sup>2</sup>The above requirements for soundness do not apply for aggregates having less than 10% material retained on the No. 4 sieve.

<sup>3</sup>The above requirements for wear do not apply to aggregates having less than 10% material retained on the No. 8 sieve.

**c. Product Control.**

(1) Size Requirements. Provide aggregate that complies with TABLE 1111-1. Determine the fineness modulus in accordance with the procedures listed in Part V, Section 17.07.

TABLE 1111-1: GRADING REQUIREMENTS FOR AGGREGATES FOR SURFACING OR RESURFACING									
Type	Material	Percent retained-square mesh sieve (Gradings after removal of deleterious substances)							Fineness Modulus
		1 1/2"	1"	3/4"	3/8"	No. 8	No. 30	No. 200	
SA-1	Sand-gravel		0	0-5	0-20			**	4.00 min.*
SA-2	Sand-gravel	0	1-15					**	5.00 min.
SA-6	Crushed Stone	0	0-5	5-25	45-100		95-100	**	
SA-7	Crushed Stone	0		25-50		85-100		**	
SA-X	Crushed Stone		0	0-5	35-65		95-100	**	

\*For fineness modulus less than 4.00 but greater than 3.75, provide additional materials as a penalty at a rate of 1.5% for each 0.05 less than 4.00 fineness modulus. Use a maximum lot size of 500 cubic yards or tons to determine penalty. Average all tests within the lot to determine penalty.

(2) Deleterious Substances. Do not exceed the following percentages of deleterious substances by weight:

- Material passing No. 200 sieve (KT-2) ..... 3.0\*\*
- Clay lumps and friable particles (KT-7) ..... 2.0\*\*
- Sticks (wet) (KT-38) ..... 2.0

\*\*The total combination of clay lumps and friable particles and material passing the No. 200 sieve can be 7% provided the contractor furnishes an additional 1.5% material for each 1% that the total combination of the two is over the 5% limit

**d. Stockpiling.** Stockpile and handle aggregates in such a manner to prevent detrimental degradation and segregation, the incorporation of appreciable amounts of foreign material, and the intermingling of stockpiled materials.

##### 1111.3 TEST METHODS

Test aggregates according to the applicable provisions of SECTION 1111.

## **1111 - AGGREGATES FOR SURFACING OR RESURFACING**

### **1111.4 PREQUALIFICATION**

Prequalify aggregate sources according to **subsection 1101.4.**

### **1111.5 BASIS OF ACCEPTANCE**

Aggregates covered by this subsection are accepted based on the procedures described in **subsection 1101.5.**



**1112 - AGGREGATES FOR SURFACING OR SUBGRADE MODIFICATION  
FOR COUNTY SECONDARY ROADS**

**SECTION 1112**

**AGGREGATES FOR SURFACING OR SUBGRADE MODIFICATION  
FOR COUNTY SECONDARY ROADS**

**1112.1 DESCRIPTION**

This specification covers types of aggregates used for surfacing or subgrade modification for county secondary roads as shown in the Contract Documents.

**1112.2 REQUIREMENTS**

**a. Composition.** Provide one of the types of aggregate for surfacing or subgrade modification for secondary roads as shown in **TABLE 1112-1** and **1112-2**.

**b. Quality<sup>1</sup>.**

- Soundness<sup>2</sup>, minimum (KTMR-21) .....0.85
- Wear<sup>3</sup>, maximum (KTMR-25) .....55%

<sup>1</sup>Crushed aggregates with less than 10% material retained on the No. 4 sieve (excluding mineral filler supplements) must be produced from a source complying with the official quality requirements of this Section prior to crushing.

<sup>2</sup>The above requirements for soundness do not apply for aggregates having less than 10% material retained on the No. 4 sieve.

<sup>3</sup>The above requirements for wear do not apply to aggregates having less than 10% material retained on the No. 8 sieve.

**c. Product Control.**

(1) Size Requirements. Provide aggregate that complies with **TABLE 1112-1**. Determine the gradation factor in accordance with the procedures listed in Part V, Section 5.17.07.

<b>TABLE 1112-1: GRADATION REQUIREMENTS</b>										
<b>Type</b>	<b>Material</b>	<b>Percent retained On standard square mesh sieves*</b>								<b>Gradation Factor</b>
		<b>2"</b>	<b>1 1/2"</b>	<b>1"</b>	<b>3/4"</b>	<b>3/8"</b>	<b>No. 4</b>	<b>No. 8</b>	<b>No. 30</b>	
SS-3	Crushed Stone		0	0-15		45-85			90-100	
SS-5	Crushed Stone	0	0-5	0-30		45-90			90-100	
SS-7	Sand-gravel			0	0-5	0-20				4.00 - 5.00**
SS-8	Sand-gravel			0	0-5	0-30				3.75+
SS-9	Sand-gravel			0		0-20				3.50+
SS-10	Sand-gravel	0	0-5			0-30				3.25+
SS-14	Limestone gravel		0							

\*After removal of all deleterious substances

\*\*For grading factors less than 4.00 but greater than 3.75, provide additional materials as a penalty at a rate of 1.5% for each 0.05 less than 4.00 grading factors. Use a maximum lot size of 500 cubic yards or tons to determine penalty. Average all tests within the lot to determine penalty.

**1112 - AGGREGATES FOR SURFACING OR SUBGRADE MODIFICATION  
FOR COUNTY SECONDARY ROADS**

2. (2) Deleterious Substances. Do not exceed the values for each respective type as shown in TABLE 1112-

TABLE 1112-2: DELETERIOUS SUBSTANCES						
Type	Material	Passing No. 200 Mesh sieve		Sticks (wet)	Clay Lumps & Friable Particles	Combination <sup>3</sup>
		Note 1	Note 2			
SS-3	Crushed Stone	8.0	15.0	2.0	5.0	5.0
SS-5	Crushed Stone	8.0	15.0	2.0	5.0	5.0
SS-7	Sand-gravel	3.0	10.0	2.0	5.0	5.0
SS-8	Sand-gravel	8.0	15.0	2.0	4.0	
SS-9	Sand-gravel	10.0	15.0	2.0	3.0	
SS-10	Sand-gravel	10.0	15.0	2.0	3.0	
SS-14	Limestone gravel	7.0	30.0			

<sup>1</sup>Without penalty.

<sup>2</sup>Allowable wash penalty. The total combination of clay lumps and friable particles and material passing the No. 200 sieve can equal the value in this column (2) provided the contractor furnishes an additional 1.5% material for each 1% that the total combination of the two is over the sum of the two individual limits (1) + (3).

<sup>3</sup>Of any deleterious substances except material passing No. 200 (2).

**d. Stockpiling.**

Stockpile and handle aggregates in such a manner to prevent detrimental degradation and segregation, the incorporation of appreciable amounts of foreign material, and the intermingling of stockpiled materials.

**1112.3 TEST METHODS**

Test aggregates according to the applicable provisions of SECTION 1115.

**1112.4 PREQUALIFICATION**

Prequalify aggregate sources according to subsection 1101.4.

**1112.5 BASIS OF ACCEPTANCE**

Aggregates covered by this subsection are accepted based on the procedures described in subsection 1101.5.